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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/512,836	02/25/2000	Yukio Sakagawa	2355.11109	7158

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EXAMINER

HARVEY, DAVID E

ART UNIT PAPER NUMBER

2614

8

DATE MAILED: 07/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/512,836

**Applicant(s)**

SAKAGAWA ET AL.

**Examiner**

DAVID E HARVEY

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-74 is/are pending in the application.
- 4a) Of the above claim(s) 1-34 and 60-70 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 35-57 is/are allowed.
- 6) ☒ Claim(s) 58,59 and 71-74 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3,4,5.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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1. Claims 1-34 and 60-70 stand withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 7.

2. This application contains claims 1-34 and 60-70 drawn to an invention nonelected with traverse in Paper No. 7. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

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3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 71-74 are rejected under 35 U.S.C. 102(b) as being clearly anticipated a by notoriously well known storage mediums that are used to store code for programming a computer. The following is noted:

A) Each of claims 71-74 is directed to a storage medium for storing computer "code". Therefor, each of the claims is directed to statutory subject matter;

B) The body of each of claims 71-74 comprise plural recitations indicating that computer "code" has been stored on the storage medium, wherein each of these recitations of stored "code" associated functional language describing what the stored "code" represents. These functional recitations are equivalent to recitations of printed matter an therefor have been given no patentable weight. That is,

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the body of each claim only provides a description of what the stored computer "code" on the storage medium represents, and provides no description as to how the computer code itself has been stored in some new and novel manner.

C) The examiner takes Official Notice that storage mediums that stored computer "code" were notoriously well known in the art at the time of applicant's alleged invention. Claims 71-74 are anticipated by such prior art given that which has been set forth in part "B)" above.

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5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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7. Claims 58 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tzidon et al. [US Patent #5,737,031] and Ashton [US #5,729,672].

I. The showing of Tzidon et al.:

As is illustrated in figure 2, Tzidon et al. disclosed a system that included:

- 1) A "main camera" for generating a real "main" image signal of a foreground object that it placed in front of a "blue screen";
- 2) A first "keyer", connected to the output of the "main camera", for passing that portion of the main image signal which corresponds to the foreground object;
- 3) A "virtual set database" for generating a virtual background image of virtual objects;
- 4) A "shadow camera" for generating real "shadow" image of the foreground image from the viewpoint of the illumination source (i.e. not from the viewpoint of the "main camera";

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5) A second "keyer", connected to the output of the "shadow camera", for passing that portion of the main image signal that corresponds to the foreground object, wherein this passed portion is used to derive the foreground object's "shape" (*i.e. its **silhouette***) [NOTE: lines 1-3 of column 4];

6) "Picture processing" circuitry which utilizes the derived foreground object's shape/silhouette in order to generate a virtual shadow signal for the foreground object, and which adds this generated virtual shadow signal to the a virtual background image to create a complete virtual background image; and

7) Circuitry for producing a "combined picture" by keying the foreground image from the first keyer into the complete background image.

## II. Differences:

Claims 58 and 59 differ from the showing of Tzidon et al. only in that the shadow being generated, e.g. based on the shape/silhouette of the object, is generated for a "real" object rather than a "virtual" object.



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III. The showing of Ashton:

Ashton has been cited as evidencing the fact that it was known in the art to have detected and utilized the shape/silhouette of a virtual object to generate a virtual shadow for said virtual object [e.g. note lines 19-22 of column 7].

Given the showing of Ashton, it would have been obvious to one of ordinary skill in the art to have utilized/extended the shadow generation process described by Tzidon et al. to the processing of "virtual" objects too; i.e. wherein, obviously, the shape/silhouette of a virtual object would have been derived from calculations rather than from a camera.

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8. The following "prior art" is hereby cited:

a) The article "Modeling Geometric Structure and Illumination Variation of a Scene from Real images" by Zhang, published 1/1998, has been cited because it utilized pluralities of images taken of an object at different viewpoints and angles of illumination to interpolate images representing new/"virtual" viewpoints and at new/"virtual" illuminations;

b) Nakagawa et al [US #5,831,619] and Uchiyama et al. [US #6,400,362] have been cited as illustrating systems for rendering "new" images.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID E HARVEY whose telephone number is (703) 305-4365. The examiner can normally be reached on M-F from 9am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller, can be reached on 703 305-4795. The fax phone number for the

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organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
DAVID E HARVEY  
Primary Examiner  
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